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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER

TSAI, HENRY

ART UNIT	PAPER NUMBER
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2183

DATE MAILED: 02/11/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/783,771

Applicant(s)

BIGBEE ET AL.

Examiner

Henry W.H. Tsai

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 14 February 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-29 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-29 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 14 February 2001 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- | | |
|----------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ | 6) <input type="checkbox"/> Other: |

DETAILED ACTION

Drawings

1. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they do not include the following reference sign(s) mentioned in the description: Many, such as "145" (page 6); "135" (page 6); "124" (page 6); "122" (page 6); "116" (page 6) ; "114" (page 6) ; "112" (page 6) ; "111" (page 6) ; and "290" (page 15) . A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

2. The drawings are objected to because

"a processor 110" (page 5); "a storage device 120" (page 5); "controller 130" (page 5); and "receiver" (page 6) are not consistent with that shown in Fig. 1.

3. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they include the following reference sign(s) not mentioned in the description: Many, such as "Tag 150"; "170"; "floating point unit 135"; and "165" in Fig. 1.

A proposed drawing correction, corrected drawings, or amendment to the specification to add the reference sign(s) in the description, are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Specification

4. The disclosure is objected to because of the following informalities:

"a processor 110" (page 5); "a storage device 120" (page 5); and "controller 130" (page 5) are not consistent with that shown in Fig. 1; and

Fig. 4 is not mentioned in the "Detailed Description" of the specification.

Appropriate correction is required.

Claim Rejections - 35 USC § 112

5. Claims 1-29 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point

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out and distinctly claim the subject matter which applicant regards as the invention.

In claim 1, line 5, it is not clear how to program said masked control value into the control register. Some steps to clarify the limitations may be missing. Similar problems exist in the other claim 10.

In claim 2, the relationship between "a control register mask" and "a memory image" was not defined. Similar problems exist in the other claim 11.

In claim 4, it is not clear, based on the claim language, to have the comparing step since the step of "said saved value being stored within said memory image" is unrelated to the comparing step.

In claim 5, it is not clear how to have said control register mask comprising a default value. Some steps to clarify the limitations may be missing. Similar problems exist in the other claim 14.

In claim 6, it is not clear how to have said control register mask comprising said saved value. Some steps to clarify the limitations may be missing. Similar problems exist in the other claim 15.

In claim 8, it is not clear what is meant by "said FXSAVE instruction having associated with it a target address" since

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"it" referring to which element was not well defined. Similar problems exist in the other claim 17.

In claim 19, lines 2-3, a register (comprising bits) could not provide a plurality of functions. Some steps to clarify the limitations may be missing. Similar problems exist in the other claim 25.

In claim 29, line 1, "said at least one mask storage area" lacks proper antecedent basis.

Applicant is required to review the claims and correct all language which does not comply with 35 U.S.C. § 112, second paragraph.

Claim Rejections - 35 USC § 102

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

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7. Claims 1-6, 10-15, 19-21, and 23-26 are rejected under 35 U.S.C. 102(e) as being anticipated by Juffa (U.S. Patent No. 6,247,117) (hereafter designated as Juffa'117).

Referring to claim 1, Juffa'117 discloses, as claimed, a method comprising: accessing a control register mask (such as DM (denormal maskbit) in control register 270, see Fig. 7A); adjusting a control value for a control register (262, Flags register, see Fig. 6B) as a function of said control register mask (such as DM (denormal maskbit) in control register 270, see Fig. 7A) to generate a masked control value (DM value under such as FSCALCHK, and FSIINCHK, see Fig. 9); programming (through the numerous checking instruction, see Col. 21, lines 11-14) said masked control value (DM value under such as FSCALCHK, and FSIINCHK, see Fig. 9) into the control register (262, Flags register, see Fig. 6B).

Referring to claim 10, Juffa'117 discloses, as claimed, a machine-readable medium (in the main memory or instruction cache 16, see Fig. 3) having stored thereon a set of instructions said set of instructions, which when executed by a processor, cause said processor to perform a method comprising: accessing a control register mask (such as DM (denormal maskbit) in control register 270, see Fig. 7A); adjusting a control value for a

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control register (262, Flags register, see Fig. 6B) as a function of said control register mask (such as DM (denormal maskbit) in control register 270, see Fig. 7A) to generate a masked control value (DM value under such as FSCALCHK, and FSIINCHK, see Fig. 9); programming (through the numerous checking instruction, see Col. 21, lines 11-14) said masked control value (DM value under such as FSCALCHK, and FSIINCHK, see Fig. 9) into the control register (262, Flags register, see Fig. 6B).

Referring to claim 19, Juffa'117 discloses, as claimed, an apparatus comprising: a control register (262, Flags register, see Fig. 6B) comprising a plurality of bits (such as CF, PF, and ZF bits in Fig. 6B) to provide a plurality of functions (note such as: CF is for carry flag; PF is for parity flag; and ZF is for zero flag. Each one provides a specific function, see also Col. 19, lines 25-33); a masking mechanism (inherently existing in the Juffa'117's system) to set inactive one or more bits (see Fig. 9, last column, CF, PF, and ZF are set inactive by "0") of a control value prior to storage of said one or more bits in the control register (see such as 2nd column in Fig. 9).

As to claims 2 and 11, Juffa'117 also discloses: said accessing comprises writing an initial value (CF value before it is replaced by DM value under such as FSCALCHK, and FSIINCHK,

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see Fig. 9) to at least one address within a memory image (262, Flags register, see Fig. 6B).

As to claims 3 and 12, Juffa'117 also discloses: said accessing further comprises executing a state save operation (inherent step in the Juffa'117's system).

As to claims 4 and 13, Juffa'117 also discloses: said accessing further comprises comparing a saved value (DM value under such as FSCALCHK, and FSIINCHK, see Fig. 9) to said initial value (CF value before it is replaced by the DM value under such as FSCALCHK, and FSIINCHK, see Fig. 9), said saved value (DM value under such as FSCALCHK, and FSIINCHK, see Fig. 9) being stored within said memory image as a result of said execution of said state save operation (inherent step in the Juffa'117's system). Note as set forth above in 112, 2nd rejection, the comparing step, based on the claimed language, has no relationship with the step of "said saved value being method step limitations to claimed invention.

As to claims 5 and 14, Juffa'117 also discloses: said control register mask (such as DM (denormal maskbit) in control register 270, see Fig. 7A) comprises a default value ("0" , see Fig. 9) if said saved value is equal to said initial value ("0" , see last column in Fig. 9).

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As to claims 6 and 15, Juffa'117 also discloses: said control register mask (such as DM (denormal maskbit) in control register 270, see Fig. 7A) comprises said saved value if said saved value is not equal to said initializing value (note CF value is replaced by the DM value under such as FSCALCHK, and FSIINCHK, see Fig. 9).

As to claims 20, Juffa'117 also discloses: a mask storage area (control register 270, see Fig. 7A) to contain a pre-determined mask value (such as IM, DM (denormal maskbit), ZM, OM, UM, or PM see Fig. 7A), said mask value indicating which of said plurality of functions are available.

As to claims 21, Juffa'117 also discloses: said mask storage area (control register 270, see Fig. 7A) may be accessed by performing a state saving operation which saves said mask value (such as IM, DM (denormal maskbit), ZM, OM, UM, or PM see Fig. 7A) to a memory location (see Fig. 9, DM is stored in 7th column).

As to claims 23, Juffa'117 also discloses: said masking mechanism is a hardware masking mechanism (inherently existing in Juffa'117's system).

As to claims 24, Juffa'117 also discloses: said masking mechanism comprises: a sequence of instruction (saved in the main memory or cache memory of the processor 10, see Fig. 3) to adjust a control value by saving state Information including a control

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register value to a memory and adjusting said control register value based on a readable mask value read from the processor before restoring the state information; execution hardware to execute the sequence of instructions (see described in claim 1 above).

Referring to claim 25, Juffa'117 discloses, as claimed, a processor (processor 10, see Fig. 3) comprising: a decode unit (such as decode unit 24A, or 20B, or 20C, see Fig. 3); at least one of a plurality of registers (such as 270, control Register, see Fig. 7A, in register file 30, se Fig. 3, see also Column 20, line 6-7), said at least one of a plurality of registers comprising a plurality of bits (such as IM, DM, ZM, OM, UM, and PM bits in Fig. 7A) to provide a plurality of functions (note IM, DM, ZM, OM, UM, and PM bits in Fig. 7A each one provides a specific function, see also Col. 19, lines 65 to Column 20, lines 1-7); an execution unit (such as Function units 24A, 24B, and 24C); an internal bus (38, see Fig. 3), said decoder unit (such as decode unit 24A, or 20B, or 20C, see Fig. 3, said at least one plurality of registers (such as 270, control Register, see Fig. 7A, in register file 30, se Fig. 3, see also Column 20, line 6-7), said at least one execution unit (such as Function units 24A, 24B, and 24C being coupled by said internal bus (38, see Fig. 3).

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As to claims 26, Juffa'117 also discloses: in response to said execution unit (such as Function units 24A, 24B, and 24C) executing an instruction, said plurality of bits (such as DM value under such as FSCALCHK, and FSIINCHK, see Fig. 9) are written to a mask storage area (262, Flags register, see Fig. 6B and see DM and IM in Fig. 9) .

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. Claims 22, and 27-29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Juffa'117.

Juffa'117 discloses the claimed invention except for: said state saving operation is an FXSAVE instruction (claims 22 and 27); said at least one of a plurality of registers is an MXCSR register (claim 28); and said at least one mask storage area is an MXCSR MASK field. (claim 29).

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However, FXSAVE is just an instruction name and MXCSR is just a register name. Juffa'117's system provides the same features as the FXSAVE instruction and MXCSR register.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Juffa'117's system to comprise: said state saving operation is an FXSAVE instruction; said at least one of a plurality of registers is an MXCSR register; and said at least one mask storage area is an MXCSR MASK field since they are just an alternative name comparing with that used by the Juffa'117's system.

Allowable Subject Matter

10. Claims 7-9 and 16-18 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, second paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

11. The following is a statement of reasons for the indication of allowable subject matter: Juffa (U.S. Patent No. 6,247,117), the closest reference, and the other prior art, do not teach or fairly suggest:

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A method comprising: the adjusting comprising performing an AND operation in which said control register mask and said control value are operands (in claims 7 and 16)

Conclusion

12. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure, such as Nishikawa et al.'210 and Babaian et al.'985 also disclosing the similar limitations as claimed.

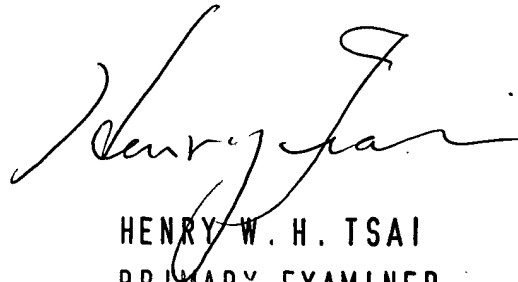
Contact Information

13. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dr. Henry Tsai whose telephone number is (703) 308-7600. The examiner can normally be reached on Monday-Thursday from 8:00 AM to 5:00 PM. If attempts to reach the examiner by telephone are unsuccessful, the examiner supervisor, Eddie Chan, can be reached on (703) 305-9712. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the TC 2100 receptionist whose telephone number is (703) 305-3900.

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14. In order to reduce pendency and avoid potential delays, Group 2100 is encouraging FAXing of responses to Office actions directly into **the Group at fax number: 703-872-9306.**

This practice may be used for filing papers not requiring a fee. It may also be used for filing papers which require a fee by applicants who authorize charges to a PTO deposit account. Please identify the examiner and art unit at the top of your cover sheet. Papers submitted via FAX into Group 2100 will be promptly forward to the examiner.



HENRY W. H. TSAI
PRIMARY EXAMINER

February 9, 2004